

Three new species of *Scaphoxium* (Coleoptera: Staphylinidae: Scaphidiinae) from New Guinea

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Three new species of *Scaphoxium* (Coleoptera: Staphylinidae: Scaphidiinae) from New Guinea. - Following new species of *Scaphoxium* are described and illustrated: *S. pigneratum*, *S. papuanum*, and *S. impeditum*. A key to the south Pacific *Scaphoxium* is provided.

Key-words: Coleoptera - Staphylinidae - Scaphidiinae - taxonomy - New Guinea.

INTRODUCTION

The genus *Scaphoxium* Löbl, 1979 contains 27 species currently recognised as valid, most of them Oriental in distribution. Only one, *S. biroi* (Pic, 1956), is reported from New Guinea. Three additional species were found ten years ago in Papua New Guinea by G. Cuccodoro (Geneva) and are described in the present paper. *S. biroi* that is known so far only by its holotype, was not represented in recent collections. The new material comes from sieved forest litter samples and was extracted in Winkler/Moczarski devices. It is housed in the collection of the Muséum d'histoire naturelle, Geneva (MHNG).

The Asian species of *Scaphoxium* were keyed in Löbl, 1992. Since, two additional species were described from China and Nepal (Löbl, 2001), both possessing conspicuous aedeagal features. The species that are known from the south Pacific area are keyed in the present paper. *Scaphisoma actuosum* Broun, 1881 from New Zealand, is not included in the key as it was incorrectly assigned to *Scaphoxium* (Klimaszewski & Newton, 1996 and Löbl, 1997) (unpublished).

For methods see Löbl, 1992.

TAXONOMY

Scaphoxium pigneratum sp. n.

Figs 1-3

Holotype ♂: Papua New Guinea, Morobe distr., Wau, at Wau Ecological Institute, 1200 m, litter in a coffee plantation, 26.V.1992, G. Cuccodoro #9B (MHNG).

Paratype: Morobe distr., Mt. Kaindl, 1350 m, 24.V.1992, G. Cuccodoro #7, 1 ♀ (MHNG).

Description. Length 1.35-1.40 mm, dorso-ventral diameter 0.67 mm. Body almost uniformly light ochreous, pronotum, femora and tibiae slightly lighter than

elytra and metasternum, abdominal apex, antennae and tarsi distinctly lighter. Length ration of antennal segments as follows: III 4, IV 4, V 7, VI 7, VII 11, VIII 9, IX 13; X 12, XI 16; segment VIII about 3 times as long as wide, segment XI 4 times as long as wide. Pronotal and elytral punctuation dense and very fine, hardly visible at 100 times magnification. Hypomera with median ridge below upper margin. Scutellum concealed. Elytra with sutural striae fine, evanescent 0.20 mm posterior margin of pronotal lobe, lateral striae slightly shortened, not touching basal margin. Mesosternal shield grooved medially. Metasternum shallowly impressed in middle, very finely and sparsely punctate on lateral areas. Submesocoxal lines strongly arcuate, very finely punctate. Submesocoxal areas 0.06-0.07 mm long, slightly longer than smallest interval to metacoxae. Metasternal longitudinal ridges curved, not reaching up to submesocoxal lines. Metepisterna slightly narrowed apically, metasternal sutures entire, reaching apically metepimera. Exposed abdominal sternites with punctulate and transversely striate microsculpture. Abdominal sternites 1 to 4 with distinct pubescence.

Male sexual characters. Segments 1 to 3 of protarsi slightly widened. Aedeagus (Figs 1 to 3) 0.44 mm long. Parameres with conspicuously wide apical portion, subapical apophysis absent. Internal sac with single slender basal rod, moderately sclerotized, arcuate, subapical structure, and membranes very finely spinulate.

Comments. This species resembles *S. biroi* (Pic) by its light body coloration, the comparatively small body size, the large submesocoxal areas, and the distinct metepisterna. The male characters of *S. biroi* are unknown. Nevertheless these two species may be easily distinguished by the mesosternal shield that is only slightly impressed and the metasternal/metepimeral sutures shortened in *S. biroi*. The male characters are unknown also from the Himalayan *S. gibbosum* (Champion) that is characterised by the comparatively coarsely punctate lateral parts of the metasternum. *Scaphoxium pigneraatum* differs drastically from the remaining congeners by the wide apical part of the parameres.

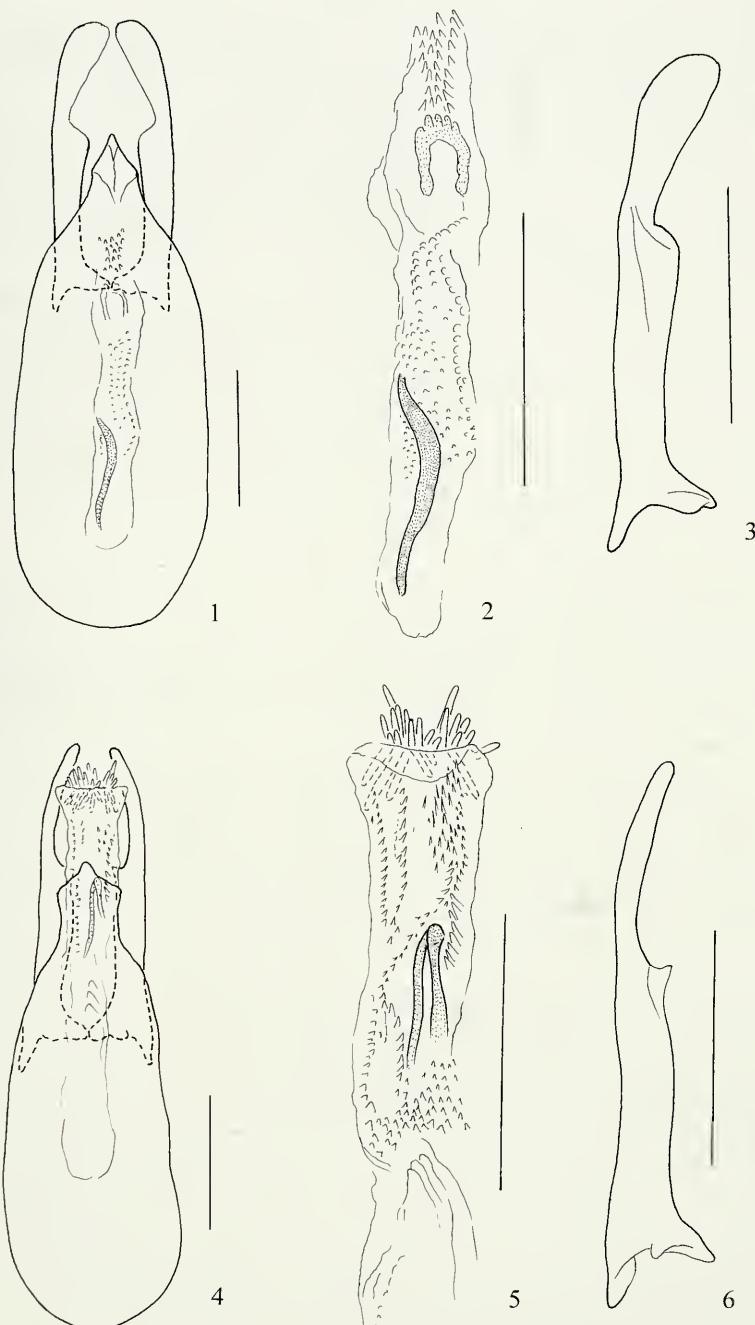
Scaphoxium papuanum sp. n.

Figs 4-6

Holotype ♂: Papua New Guinea, Morobe distr., Biaru Road, Mt. Kolorong, 2000 m, 3.VI.1992, G. Cuccodoro #15C (MHNG).

Paratypes: with same data as holotype but 2200 m, 1.VI.1992, #13C, 2 ♀; same data but 2.VI. 1992, #18C, 1 ♀; same data but 2250 m, #14F, 1 ♀. (MHNG).

Description. Length 1.40-1.50 mm, dorso-ventral diameter 0.80-0.95 mm. Body ochreous to dark reddish-brown, apical abdominal segments, femora and tibiae rufous, antennae and tarsi ochreous. Length ration of antennal segments as follows: III 7, IV 8, V 10, VI 10, VII 12, VIII 10, IX 11, X 11, XI 15 (holotype); segment VIII hardly 3 times as long as wide; segment XI about 2.5 times as long as wide. Pronotal and elytral punctuation dense and very fine, hardly visible at 100 times magnification. Hypomera with median ridge. Scutellum concealed. Elytra with sutural striae fine, evanescent 0.20-0.30 mm posterior margin of pronotal lobe, lateral striae slightly shortened, reaching anteriorly about to line of mid-length of metasternum. Mesosternal shield grooved medially. Metasternum flattened in middle, very finely and sparsely punctate. Submesocoxal lines strongly arcuate, very finely punctate. Submesocoxal areas 0.04-0.06 mm long, shorter than smallest interval to metacoxae. Metasternal



FIGS 1-6

Aedeagi of *Scaphoxium*, scale bars = 0.1 mm; 1-3, *S. pigneratum* sp. n., 4-6: *S. papuanum* sp. n.

longitudinal ridges oblique, not reaching up to submesocoxal lines. Metepisterna not fused to metasternum, parallel-sided, with fine, almost straight suture. Exposed abdominal sternites with punctulate microsculpture hardly visible on basal sternites (magnification 200 times), distinct on apical sternites.

Male sexual characters. Segments 1 to 3 of protarsi slightly widened. Aedeagus (Figs 4 to 6) 0.42 mm long. Parameres with subapical process small, blunt, subtriangular. Apical part of parameres long, narrow, about as wide as half of width at parameral mid-length. Internal sac with bifid, narrow rod in middle; membranes finely spinulate and with baculiform structures at apex.

Comments. *S. papuanum* shares the parameral characters with following south Pacific species: *S. ventrale* (Löbl), *S. vitianum* (Löbl) and *S. maleculense* (Löbl). Among them only *S. ventrale* and *S. papuanum* have completely fused metepisterna. *S. papuanum* may be readily distinguished from *S. ventrale* by the internal sac of the aedeagus bearing a central rod, very fine squamose and spinulate basal structures, and sclerotized, apical, baculiform structures. The internal sac of the aedeagus in *S. ventrale* has almost even, long spine-like structures and two apical denticles (see Löbl, 1980).

***Scaphoxium impeditum* sp. n.**

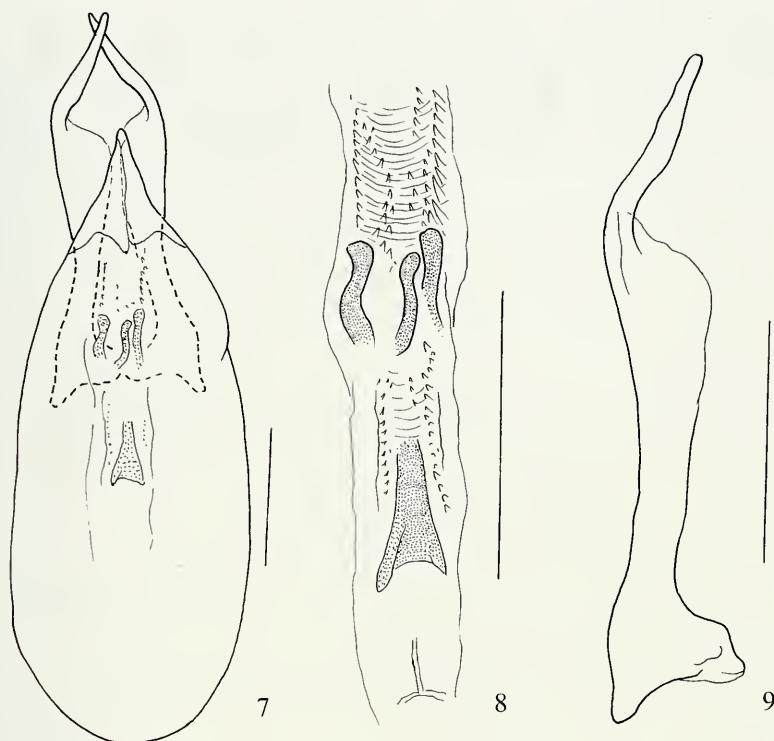
Figs 7-9

Holotype ♂: Papua New Guinea, Morobe distr., Wau region, Mt. Kaindi, 1350 m, 24.V.1992, G. Cuccodoro #7 (MHNG).

Paratypes: same data as holotype, 2 ♂; Morobe distr., Wau region, Bitoi road south Mt. Mission, 1350 m, 22.V.1992, G. Cuccodoro #6B 3 ♂, 8 ♀; Morobe distr., Wau, 1150 m, 19.V.1992, G. Cuccodoro #4A, 1 ♀; Morobe distr., Wau, 1450 m, 21.V.1992, G. Cuccodoro #5B, 1 ♂; 3 ♀ (MHNG).

Description. Length 1.35-1.55 mm, dorso-ventral diameter 0.74-0.83 mm. Body very dark, almost black, elytral apices, apical abdominal segments, femora and tibiae rufous, antennae and tarsi ochreous. Length ration of antennal segments as follows: III 7, IV 7, V 9, VI 7, VII 11, VIII 8, IX 10, X 10, XI 13 (holotype); segment VIII hardly 3 times as long as wide; segment XI about 2.5 times as long as wide. Pronotal and elytral punctuation dense and very fine, elytral punctuation slightly coarser than pronotal punctuation and distinct at 100 times magnification. Hypomera with median ridge. Scutellum completely concealed. Elytra with sutural striae very fine, variable in length, evanescent posterior elytral mid-length or extending more anteriorly, up to anterior third of sutural length. Lateral striae not shortened, almost reaching basal margins. Mesosternal shield flattened medially, with two very shallow, minute apicomedian depressions. Metasternum flattened in middle, punctuation very fine, dense in middle, sparse laterally. Submesocoxal lines strongly arcuate, very finely punctate. Submesocoxal areas 0.04-0.06 mm long, shorter than smallest interval to metacoxae. Metasternal longitudinal ridges oblique, not reaching up to submesocoxal lines. Metepisterna fused to metasternum, lacking trace of suture. Exposed abdominal sternites with punctulate microsculpture hardly visible on basal sternites (magnification 200 times), distinct on apical sternites, basal punctures coarser than punctures margining submesocoxal lines.

Male sexual characters. Segments 1 to 3 of protarsi slightly widened. Aedeagus (Figs 7 to 9) 0.50-0.55 mm long. Parameres gradually, strongly widened to form large,



FIGS 7-9
Aedeagus of *Scaphoxium impeditum* sp. n., scale bars = 0.1 mm.

rounded, subapical lobes, lacking processes. Apical part of parameres narrow, with irregular margins. Internal sac bearing one gut-like, subbasal plate narrowed apically, and three narrow, central rods. Membranes of internal sac transversely striate and finely spinulate.

Comments. This species shares the shape of the parameres and the presence of sclerotized rods in middle part of the internal sac with *S. lemarei* Löbl from New Ireland. These rods change their position and become perpendicular to the axis in the aedeagus when the internal sac is extruded. *S. lemarei* differs from *S. impeditum* in having only two central rods and by the absence of the basal, gut-like plate. The two species may be also easily distinguished by the metepisterna that are fused in *S. impeditum*, separated by suture in *S. lemarei*.

KEY TO THE SOUTH PACIFIC SPECIES OF SCAPHOXIUM

1	Metepisterna fused to metasternum	2
-	Metepisterna separated from metasternum by distinct suture	5
2	Small species, 1.1 long. Body uniformly light ochreous. Hypomera each with fine median stria. Antennal segment 8 small, 1.5 times as long as wide, segment 11 long, about 4 times as long as wide, about 1.5 times as	

long as segment 10. Mesosternal shield lacking median ridge or impression; with anterior intercoxal ridge grooved. Median metasternal impression shallow. New Guinea	<i>S. biroi</i> (Pic)
- Larger species 1.35-1.5 mm long. Body very dark reddish-brown to black	3
3 Hypomera lacking median stria or ridge. Parameres of aedeagus with small, acute lobe. Internal sac with two apical denticles and fine hair-like structure. Fiji	<i>S. ventrale</i> (Löbl)
- Hypomera with median ridge. If parameral lobe acute, internal of aedeagus sac with baculiform structures and median rods	4
4 Parameres of aedeagus with small, acute lobe. Internal sac of aedeagus with apical, baculiform structures and two median rods joined apically. New Guinea	<i>S. papuanum</i> sp. n.
- Parameres of aedeagus with large, rounded lobe. Internal sac with denticulate apical structures, three median rods and one proximal, gutter-like sclerite. New Guinea	<i>S. impeditum</i> sp. n.
5 Parameres of aedeagus with broadly rounded lobe	6
- Parameres of aedeagus with acute lobe	9
6 Apical part of aedeagal parameres strongly narrowed	7
- Parameres of aedeagus not narrowed apically, near apex about as wide as anterior parameral lobe. New Guinea	<i>S. pigneratum</i> sp. n.
7 Parameres of aedeagus weakly widened toward lobe	8
- Parameres of aedeagus strongly widened toward lobe. New Ireland	<i>S. lemarei</i> Löbl
8 Internal sac of aedeagus with four rods. Queensland	<i>S. oxyurum</i> (Löbl)
- Internal sac of aedeagus with two basal rods. Queensland	<i>S. cuspidatum</i> (Löbl)
9 Internal sac of aedeagus covered with very fine denticles, lacking baculiform structures. Fiji	<i>S. vitianum</i> (Löbl)
- Internal sac of aedeagus with apical baculiform structures and a cluster of spine-like structures. Fiji, New Hebrides	<i>S. malekulense</i> (Löbl)

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REFERENCES

KLIMASZEWSKI, J. & NEWTON, A. F. 1996. A review of the New Zealand rove beetles (Coleoptera: Staphylinidae). *New Zealand Journal of Zoology* 23: 143-160.

LÖBL, I. 1980. Scaphidiidae (Coleoptera) of Fiji. *New Zealand Journal of Zoology* 7: 379-398.

LÖBL, I. 1992. The Scaphidiidae (Coleoptera) of the Nepal Himalaya. *Revue suisse de Zoologie* 99: 471-627.

LÖBL, I. 1997. Catalogue of the Scaphidiinae (Coleoptera: Staphylinidae). *Instrumenta Biodiversitatis* 1: xii + 190.

LÖBL, I. 2001. Four new Asian species of Scaphidiinae (Coleoptera, Staphylinidae). *Veröffentlichungen des Naturmuseums Erfurt* 20: 181-187.